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AUTHOR Spinelli, Cathleen G.
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ABSTRACT

This study examined whether discrepancy between aptitude and achievement is used to determine eligibility in the classification of learning disabilities. Test scores of 50 middle and high school students from eight school districts were used to determine whether Federal Code eligibility criteria were used to determine initial eligibility for classification and/or for the reevaluation following 3 years of special education services. Results indicated that not only were students initially classified as learning disabled with minimal or no discrepancies, but their classification was maintained when they were re-evaluated. The data also suggest that when students with minimal discrepancies are classified and placed in special education classes, their performance scores on standardized intelligence tests tend to decrease. Discussion focuses on the inconsistency of eligibility requirements, the effects this inconsistency has on programming, and the educational and social-emotional implications for students. (Contains 31 references.) (Author/DB)

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Abstract

This study examines whether discrepancy between aptitude and achievement is used to determine eligibility in the classification of learning disabilities. Test scores of students (N=50) from eight school districts were used to determine whether Federal Code eligibility criteria was used to determine initial eligible for classification and/or for the reevaluation following three years of special education services. Results indicated that not only were students initially classified learning disabled with minimal or no discrepancies but their classification was maintained when they were re-evaluated. The data also suggests that when students with minimal discrepancies are classified and placed in special education classes, their performance scores on standardized intelligence tests tend to decrease. This study addresses the inconsistency in eligibility requirements, the effects this inconsistency has on programming and the educational and social-emotional implications for students.

Issues in the Application of Aptitude-Achievement Discrepancy as a Criteria for Classifying Students Learning Disabled

The definition and criteria for determining what constitutes a learning disability has been a controversial issue for decades (Kavale & Forness, 1995). It is a critical issue in education, in that, students who are learning disabled need to be identified in order to receive appropriate special education services. Following the implementation of P.L. 94-142, The Education of All Handicapped Children's Act (now IDEA), and its subsequent regulations, a Congressional committee was assembled and designated to formulate a definition and criteria for learning disabilities. After considerable review and revision, the Federal definition of learning disabilities, printed in the Federal Registry in December of 1977, specified that as one of the criteria, a severe discrepancy must exist between aptitude and achievement (P.L. 94-142 Regulations, 1977). This statement caused some considerable debate and ongoing confusion for the educational practitioners who must implement this code regulation (Artiles & Trend, 1994).

Although we now technically have a standard for determining eligibility for classification of learning disabilities, the definition and criteria are vague and uniform application continues to be a challenge to the field of education (Gottlieb, Alter, Gottlieb, & Wishner, 1994; Mercer, King-Sears & Mercer, 1990). Professionals in the field have been stressing the need to enhance our understanding of learning disabilities beyond children's learning characteristics (Keogh, Gallimore, & Weisner, 1997). The issue of identification is

of particular concern because specific learning disabilities is, by far, the classification category most frequently used (Eighteenth Annual Report, 1996). More than fifty percent of the children in this country (over 2 ½ million) who are classified as eligible for special education services are labeled learning disabled (Artiles, Aguirre-Munoz, & Abedi, 1998; International Reading Association, 1995). Identification criteria have been focused on as a means to: a) reduce the number of students classified and placed as learning disabled, thus decreasing the cost of their education; and, b) increase objectivity in identifying students with learning disabilities (Mather & Healey, 1990). Meanwhile, the number of students identified as having a specific learning disability has grown steadily, and more than any other disability, since the passage of Part B of the Individuals with Disabilities Education Act (IDEA) (Eighteenth Annual Report, 1996). The definition has shifted from one used to identify the child who is suffering from a neurological impairment to one based on the child's degree of academic success (Torgesen, 1986). Over the past ten years, the learning disabled population has more than doubled while the total number of students in the United States schools has decreased (U.S. Department of Education, 1995).

There are numerous differences in the way that states operationalize their identification procedures. Prereferral interventions, adequate assessment instruments and discrepancy models which use standard score and regression formulas have been recommended for use by most state departments of education in an attempt to more accurately identify students with learning disabilities. There seems to be consensus among professionals

that a clear statement relative to the existence of a discrepancy is needed (Mercer et al., 1990). The ongoing definitional problems include 1) the poorly understood Federal definition of learning disabilities which is viewed as too vague and subjective, 2) the continued struggle of states to determine how to establish a discrepancy, and 3) the lack of specific criteria to determine what degree of discrepancy is considered to be significant. A review of the literature indicates that there is a wide variation on how states define severe discrepancy. The latest annual report to Congress indicates that during 1994-95, while the national average of students aged 6 to 21 years who are labeled specific learning disabled in the general school population is 4.28%, the variation among the 50 states ranges from 7.27% to 2.31% (Eighteenth Annual Report, 1996). The Department of Education (1996) reports that almost twice as many students who are classified specific learning disabled and placed in full-time special education placements are from inner cities (36.4%) than from rural and suburban communities (19%).

Although most states use some form of discrepancy model to identify learning disabilities, there are numerous differences in the way states are operationalizing their identification procedures. There is a need to focus on whether standard criteria is being used for determining the classification of learning disabilities. At a time when the majority of states have tried but were either using alternative methods or were disregarding the definition of learning disabilities specified in the Code, one northeastern state legislated a change in their State Administrative Code to come into compliance with the Federal Code after having

been out of compliance since the Federal Code's inception in the late 1970's. School districts from this state were used in this study.

Test results were analyzed for a group of students who were evaluated using aptitude and achievement measures. Their performance patterns were compared to those obtained by the same students on similar measures three years previously. The purpose of this study was a) to determine whether a consistent standard was being applied to determine eligibility for the classification of learning disabled, b) to determine how these standards affected the classification status of students classified as learning disabled prior to the implementation of the Federal Code standards, and c) to determine whether the criteria used to determine eligibility had changed after the implementation of the Federal Code standards.

Method

Subjects

The subject population consisted of 50 middle and high school students, 64% male (N = 32) and 36% female (N= 18). The students ranged in age from 10.3 years to 18.3 years with a mean age of 15.2 years and a median age of 15.7 years. The grade range was from 5th to 11th with a mean grade level of 8.9 and a median grade level of 9.0. The students were selected from eight school districts, kindergarten through high school districts and kindergarten through eighth grade districts, in a south-central county in this northeastern state. The students used in this study had been classified learning disabled by their district's Child Study Team, the school professionals who evaluate and determine classification eligibility.

The students selected for this study were the first group of students due for their triannual reevaluation following the State Administrative Code Revision which put the State Code in compliance with the Federal Code. The students were evaluated with the Wechsler Intelligence Scales and the Woodcock Johnson Psycho-Educational Battery. Each student's aptitude and achievement test scores were compared.

Procedures and Measures

According to federal law, mandatory reevaluation of all students classified as educationally handicapped and receiving special education and /or related services must be completed within three years of the date of the previous classification. After the evaluations were completed, a decision was made to (1) maintain the classification of learning disabled, (2) to reclassify or, (3) to declassify the student at the classification conference held with the Child Study Team and the student's teacher and parent(s).

As part of the diagnostic assessment, each student was tested using an intellectual and achievement test battery. The measured difference between each student's initial and reevaluated standard scores for the full scale IQ and in each achievement area was evaluated to determine whether a statistically significant discrepancy existed. Also, a comparison was made between test results and classification outcomes.

The Woodcock Johnson Psycho-Educational Battery-Revised (WJPEB-R) Tests of Achievement was used for both the initial and the reevaluations. The achievement battery of the WJPEB-R measures three global areas: broad reading, broad mathematics and broad

written language (Woodcock and Johnson, 1989). The Wechsler Intelligence Scale for Children(WISC-III), (Wechsler, 1991) and the Wechsler Adult Intelligence Scale-Revised (WAIS-R) (Wechsler, 1981) were used for the psychological evaluations. When students from the initial evaluations were reevaluated, many of these students were in a new age category and needed to be reevaluated with the test for older adolescents/adults.

Studies indicate that the correlations between the WISC-III and the WISC-R intelligence scores are very high. The magnitude of these correlations indicate that these two tests measure very similar constructs. The WAIS-R full scale is approximately 4 points higher than the full scale WISC-III score. The WAIS-R verbal and performance scores are about 2 to 5 points greater, respectively, than the corresponding WISC-III scores. Due to the number of years between these tests' standardizations, the difference in scores was within expected limits (Flynn, 1987).

Descriptive statistics were used to summarize the data collected on the research, specifically, to make comparisons between the initial and reevaluations. Standard deviations were used to measure the extent to which scores in the distribution, on the average, deviated from the mean. Measures of central tendency were used to describe the average of sets of scores. Inferential statistics were used to determine the significance of the results and to allow generalization from the results of this study to situations not studied. T-tests were used to determine whether the two means (the standard score full scale IQ score from the Wechsler Intellectual Test and the standard score of the reading, math and written language subtests of

the Woodcock Johnson Psycho-Educational Battery) differed significantly from each other. "F" values were used to determine the ratio of between-group variance to within-group variance. An analysis of variance was performed to ascertain whether the mean scores differed significantly and whether the various factors interact significantly with each other.

Test results were coded for analysis. The standard score difference formula was used to determine standard score discrepancies. The basic standard score comparison procedure involves comparing the standard score value on a standardized test of mental ability (WISC-III and WAIS-R) and the comparable standard score value on a standardized achievement test (WJPEB-R). The standard scores from the full scale score of the WISC-III or WAIS-R and the standard score of the broad reading, broad math and broad written language section of the WJPEB-R were compared for discrepancy. The formula employed to determine discrepancy was adapted from the discrepancy formula used in most states to comply with the Federal standards for Learning Disability eligibility. The formula is:

$$\frac{\text{FSIQ - Ach. St. Sc.}}{15\ (SD)}$$

The degree of discrepancy considered to be significant is regarded by the majority of states to be 1 to 2 standard deviations (Frankenburger & Fronzaglio, 1991). States use the standard score difference method more than other methods for computing discrepancies between IQ and achievement. Typically, a discrepancy of 15 points or larger (1 standard deviation) is considered significant for eligibility criterion (Chalfant, 1984). This selected

level of academic discrepancy is employed by most researchers (Algozzine & Ysseldyke, 1983; Shepard & Smith, 1981). In a normal distribution, values larger than 1 ½ standard deviations from the mean, in either direction, occur about 7% of the time (Wilson, 1985).

Results

Analysis of the initial evaluation indicated that more than half, 56% of the students studied did not demonstrate a severe discrepancy between their aptitude and achievement scores yet were classified learning disabled. Twenty-eight of the 50 students did not have a discrepancy of even 1 standard deviation. Of these 28 students, 24% (N = 12) had a discrepancy of from ½ to 1 standard deviations and 22% (N = 11) had a discrepancy of less than ½ standard deviation between their full scale IQ and at least one achievement test and 10% (N = 5) were considered to be overachieving as all three of their achievement test standard scores were higher than their full scale aptitude standard scores. Analysis of the reevaluation indicated that 78% (N = 39) of the students did not have a discrepancy of more than 1 to 1 ½ standard deviations. Of the 22% (N = 11) students who demonstrated a severe discrepancy, 14% (N = 7) students had a discrepancy of from 1 to 1 ½ standard deviations, 4% (N = 2) students had a discrepancy of from 1 ½ to 2 standard deviations and 4% (N= 2) students had a deviation of more than 2 standard deviations. The majority of the students did not have a significant discrepancy, 28% (N = 14) had a discrepancy of from ½ to 1 standard deviation, 24% (N = 12) demonstrated a discrepancy of less than ½ standard deviation and 26% (N = 13) not only did not demonstrate any discrepancy but they performed above their

scored aptitude level. This suggests that they are working at a level above what could be expected according to aptitude test results. The mean IQ score for the initial evaluation was 99.2 with a standard deviation of 11.34 and a range from 74 to 131. The mean IQ score for the reevaluation was 94.8 with a standard deviation of 11.22 with a range from 73 to 131. Student IQ scores increased in 11 of the 50 subjects. When the confidence interval of 5 points is taken into account for the 11 students who increased their full scale IQ, 6 students increased their IQ from 6 to 12 points. The IQ levels of 4 students remained the same. A most significant finding was that 70% (N= 35) of the students' measured IQ's decreased beyond the 5 point confidence interval. The IQ's of 40% (N = 20) of the students dropped from 7 to 21 points with 24% (N =12) of the students' IQ's demonstrating a decrease of over 10 points. The mean IQ change between initial evaluations and the reevaluations was 4.4 with a standard deviation of 8.12. An analysis of variance was used to ascertain whether a significant difference existed among IQ levels when the total population was divided into three age groups. The initial evaluation score difference was .4992 with an "F" score of .7051 which is not considered statistically significant. The mean 1989-90 IQ score was 99.1600. The reevaluation IQ score difference was .4926 with a F score of .7189. The mean reevaluation was 94.7600. An analysis of the mean IQ change between the initial and the reevaluation IQ scores demonstrated a statistically significant difference of .03844 with an "F" score of 3.4952 between the groups. There was a mean IQ change between the 10.3 to 14.9 age group of .1875, between the 15.0 to 16.4 age group of 6.5000 and between the 16.5 to 18.3 age

group of 6.2143.

Although only 22% (N = 11) of the students had a discrepancy of more than 1 standard deviation between their full scale IQ and at least 1 of the 3 broad achievement tests administered, 86% of the students maintained their classification of learning disabilities following the reevaluation. Three students (6%) had their classifications changed from learning disabled to another classification category, one student was reclassified Socially Maladjusted, another was classified Emotionally Disturbed and the third student was classified Multiply Handicapped: Emotionally Disturbed-Learning Disabled. Only 8% (N = 4) of the students were declassified. Of the four declassified students, one case stands out as an example of what can happen when a child is classified when, in fact, they do not meet the criteria. This student actually has technically not been eligible for classification of learning disabled as he did not have a severe discrepancy between his aptitude and achievement scores (a discrepancy of less than 1 standard deviation) when initially classified and was functioning in the overachieving range (with an achievement score higher than aptitude score) when reevaluated. This student had been classified and was placed in the special education program and according to test results, his full scale IQ had dropped 17 points from the initial evaluation to the reevaluation.

Discussion

Analysis of the results of the initial and the reevaluation suggest that school districts are not using the severe discrepancy between aptitude and achievement criteria set forth in the

Federal Code when determining eligibility for classification of learning disabilities. During the period of time prior to this state's implementation of the Federal Code into the state Code regulations, the definition and standard for determining that a student was eligible for classification of learning disabled was non-specific and ambiguous. A learning disability was characterized as a disorder in understanding and learning in the academic areas to the extent that special education was necessary for achievement. This general definition resulted in wide parameters of interpretation. School districts classified students learning disabled who demonstrated average intelligence yet were functioning below grade expectancy level. Reasons for this below average functioning included not only perceptual processing problems but attentional deficits, serious organizational difficulties, poor motivation and lack of persistence. Students who were learning at a slower pace than their grade level peers but still functioning above the borderline range of intelligence were classified learning disabled. Also, Child Study Teams could justify classifying children learning disabled when their intellectual ability was within the mentally deficient range but their adaptive skills were adequately developed. No specific operational definition was provided for determining classification eligibility, therefore, the classification of learning disabilities became the most commonly used and abused educational label.

The most significant finding was the drop in IQ scores between the initial and the reevaluations. Comparison of the IQ scores indicated that the measured IQ score of 40% (N=20) of the students decreased beyond the confidence interval and, of these, 24% (N = 12)

of the students decreased more than 10 points. The decrease was noted with the upper two-thirds of the students who consisted of adolescents in high school. The students in the youngest group, those aged 14 years and younger, consisting of middle school and early high school levels, did not differ at a statistically significant level. This finding suggests that as the curriculum becomes increasingly more varied and challenging and requires more divergent and abstract thinking skills, students who are classified learning disabled and placed in special education programs are performing at a significantly lower level than expected according to previous intelligence test results with age factored in.

Technical specialists at the Psychological Corporation, publishers of the Wechsler Psychological Tests, were consulted as to the reason for the decline in test scores in order to determine to what extent, if any, the effect of using the WISC-R and then re-testing with the WISC-III-R would have in scores. There is a typical drop in full scale IQ from 5 to 7 points due to the restandardization of the test, as is typical in the revision and restandardization of any normed test. A decline of more than the 7 points should not necessarily be considered to be a decline in overall measured intelligence, but rather, as the individual matures, his performance seems to plateau, due to either a slower rate of learning or lack of exposure or ability to master more complex information which requires higher level thinking skills. This phenomenon is apparent in the example of the nine year old student who was functioning intellectually within the average range of ability when initially evaluated. This child did not keep pace academically with his peers due to learning disabilities, limited or lack of exposure

to increasingly challenging material, lack of motivation/interest and/or poor self confidence. Therefore, when reevaluated three years later and this child's performance is compared to the performance of a typical 12 year old, the child's IQ will appear to decline. The effects of classification for students who are not experiencing a severe or moderate discrepancy are multi-faceted. When students are educationally labeled inappropriately, they are segregated from their classmates for whatever amount of time is designated by their Individual Education Plan and placed into special education programs. They tend to be in less challenging programs, they are frequently not exposed to the quantity and/or quality of curriculum as their chronological peers and often their self-esteem is affected. According to studies by LaGreca, Stone and Halpern (1988) low achieving students who are not labeled do not appear to suffer the same social life as those labeled learning disabled.

Siegel (1989a) reports that students designated as having a learning disability tend to have a lower IQ as consequence of their disability and implicates the Matthew effect as being a factor in this outcome. Stanovich (1986) compares this to the relationship between the development of reading problems and reading skills. Children who have difficulty learning to read have less experience with print and lower self esteem and motivation, which leads to further problems in the development of reading skills and ultimately a decrease in IQ scores. With the Matthew effect, an "initial specific problem may evolve into a more generalized deficit (performance in IQ tests, for example) due to the behavioral-cognitive-motivational spinoffs from failure at such crucial educational tasks as reading" (Stanovich, 1986, p. 389).

IQ is influenced within a multivariate context (Lyon, 1989). Many students with learning disabilities perform poorly on the verbal tasks of the WISC-R (Siegel & Ryan, 1988). Lack of exposure to verbal concepts through print seem to reduce performance on the vocabulary and comprehension subtest of intelligence tests (Stanovich, 1986). Siegel (1989b) feels that when an individual is not exposed to the specific information required by a test, he will score lower and be called "less intelligent" when, in fact, the child simply has acquired less factual knowledge. Based on these findings, it would seem that a decline in IQ scores could be expected in classified students due to the lack of exposure to the standardized curriculum that mainstreamed student receive. Therefore, when students who are not technically learning disabled according to severe discrepancy standards, are classified and placed in special education programs, their performance will likely be negatively affected.

The process for identification of learning disabilities specified in the Individuals with Disabilities Education Act (IDEA) requires that the child who is suspected of having a learning disability be evaluated and a recommendation be made but the process is faulty at its inception. IDEA encourages school systems to label children who need intensive academic help as being broken. Also, there has, until the recent mandates of IDEA-97, been few, if any, requirements to report progress once students are labeled learning disabled. In a recent publication, the International Reading Association stated that they are "convinced that millions of children are intentionally being mislabeled as "learning disabled" in an attempt to gain some support for extra services for these children" (International Reading Association,

1995). This organization clearly distinguishes between the student who is in need of remedial instruction and the student who is truly learning disabled. By overclassifying students who are experiencing academic difficulty in the classroom and not clearly distinguishing between these two educational categories, neither group is being serviced adequately. The students with true learning disabilities are not receiving the specialized services they need because the special education classroom is becoming a dumping ground for remedial students. Special education placements can do more harm than good for students who are not truly learning disabled. Special education teachers are trained to deal with a child who has a problem processing information but may not be familiar with remedial techniques necessary to deal with a child having difficulty in a core academic subject. Once placed in these programs, emotional, social as well as academic repercussions can affect the student. The drop-out rate for these students is higher than the general population (Gersten, Vaughn, & Brengleman, 1996; Barkley, Fischer, Edelbrock, & Smallish, 1990).

Educational Implications

There seem to be several factors regarding the use of severe discrepancy in educational classification. Among the benefits to having specific operational criterion for defining educational classification of learning disabilities would include (1) uniformity in classification, (2) a clear definition and criterion standards for determining eligibility, (3) less inappropriate placement in special education programs and, (4) ultimately, out of necessity, the development of appropriate program modifications and classroom interventions.

First, until districts use a more uniform standard to determine classification, there will continue to be a wide variation between the type of measures used, the criterion used to determine discrepancy, and the statistical standards used to determine what constitutes a severe discrepancy. Until more consistent eligibility criterion is used, students who are classified learning disabled in one district and move to a neighboring town may no longer quality for classification according to the new district's classification criterion. When the classification is removed, the child, who has had small group or individualized academic and organizational support for years, is now placed in a general education, age-appropriate classroom and is forced to adjust. As criteria and normative standards vary between districts, students in upper socio-economic districts may classify a student who is not found eligible for classification in a lower socio-economic district and visa-versa. This variability between districts will likely result in more due process cases as it could be perceived as discrimination and inconsistent application of services.

Second, a clear cut-off point used to determine what constitutes a severe discrepancy would minimize confusion and provide defensible eligibility criteria. Other state and federally funded programs, such as Basic Skills and Gifted and Talented classes, are required to use strict and well defined criterion, such as percentile scores, which eliminate inconsistency and discrimination. In order to incorporate supporting criterion to determine classification eligibility, as is allowed according to Code revisions, base line standard score discrepancies could be designated as the standard criterion with teacher reports, classroom

observations and functional assessments used as additional criteria. A weighted system could be developed in order to counterbalance the objective test score results with the more subjective measures listed above.

Third, when uniformity and clearly established criteria are determined and utilized, inappropriate/inaccurate classification should greatly decrease. Students who have been classified learning disabled due to their difficulty achieving in the standard classroom for reasons other than having a perceptual impairment would not be eligible for classification. Classroom and program modifications would have to be made through strategic interventions recommended by the schools' pupil assistance committees to deal with students who are slow learners or unmotivated learners. A major category of inappropriately classified students, those diagnosed as having Attention Deficit Disorder (ADD), would remain in the mainstreamed program with appropriate modifications. These students are often classified learning disabled in order to ensure services through IDEA (Individuals with Disabilities Education Act) when they are covered more appropriately under Section 504 of Public Law 93-112 (1973) of the Vocational Rehabilitation Act (Federal Register, 1977). This law mandates that students with disabilities receive appropriate modifications so that they have equal access to a free and appropriate education.

Students identified as having severe discrepancies and are therefore, classified learning disabled, are expected to have different needs and thus receive different programs than children without discrepancies. According to a study by Cooley (1990), this is not typically

the case. The amount of time that a student received special education service was more related to factors such as: a) IQ levels, b) school schedules, and c) reading achievement. Additionally, the areas identified on the IEP as needing remediation were not highly correlated to areas in which severe discrepancies were found. Another finding of Cooley's study was that there was little correlation between the number of hours that a student received special education services and the severity of the discrepancy between their aptitude and achievement. There was evidence that the lower the child's IQ score, the higher the mean number of hours of special education services per week that a child received.

It seems probable that the current standard of severe discrepancy between aptitude and achievement is not being regularly applied nor are its implications being appropriately addressed. Whether these criteria for determining eligibility for classification of learning disabilities can accurately distinguish which students are learning disabled has not yet been answered.

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